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ABSTRACT

This paper presents results of a review of mail survey response literature and provides recommendations for the application of some response-enhancing techniques to the Schools and Staffing Survey (SASS) of the National Center for Education Statistics. The SASS is an integrated set of surveys sponsored by the NCES and conducted by the Bureau of the Census to provide data on teachers, students, administrators, librarians, and libraries in public and private schools. The SASS uses mail questionnaires as its primary method of data collection, but in the most recent survey, only between 25% and 75% of surveys have been returned. It would not have been wise to produce SASS estimates based on the responses from mail surveys alone. After telephone interviews and a few face-to-face interviews, the response rate rose to between 80% and 100%, but obviously costs would be much reduced with better mail responses. A review of the literature indicates that response rate enhancement techniques have been grouped into the following general categories: (1) motivating a response; (2) content and appearance of correspondence; (3) postage supplied; and (4) attitudinal and behavioral modifications (not discussed in this report). Research indicates that multiple contacts are the most effective way to increase response rates, and that the SASS already includes most multiple contact techniques, with the exception of the use of special postage. Use of a fifth mail contact with two-day priority delivery is recommended. Another successful technique has been the inclusion of monetary incentives, a technique that does not seem appropriate for the SASS. The use of nonmonetary incentives, such as thank-you cards, is recommended. Making the questionnaires briefer and easier to complete is among additional recommendations. (Contains 7 tables and 24 references.) (SLD)

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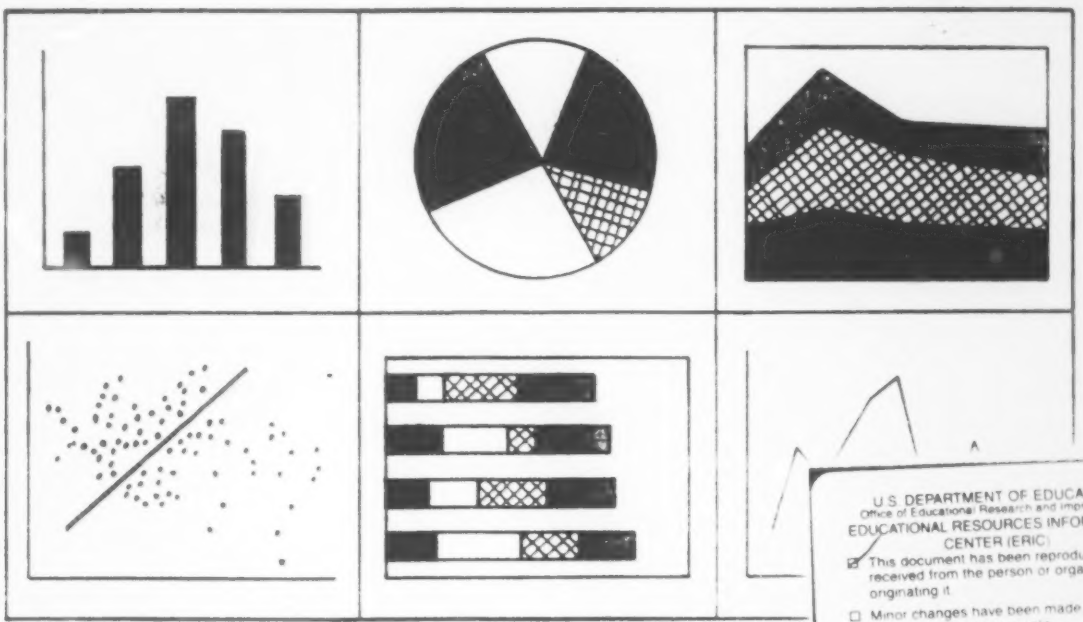
Improving the Mail Return Rates of SASS Surveys:

A Review of the Literature

Working Paper No. 97-18 June 1997



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Improving the Mail Return Rates of SASS Surveys:

A Review of the Literature

Working Paper No. 97-18 June 1997

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Foreword

Each year a large number of written documents are generated by NCES staff and individuals commissioned by NCES which provide preliminary analyses of survey results and address technical, methodological, and evaluation issues. Even though they are not formally published, these documents reflect a tremendous amount of unique expertise, knowledge, and experience.

The ***Working Paper Series*** was created in order to preserve the information contained in these documents and to promote the sharing of valuable work experience and knowledge. However, these documents were prepared under different formats and did not undergo vigorous NCES publication review and editing prior to their inclusion in the series. Consequently, we encourage users of the series to consult the individual authors for citations.

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Improving the Mail Return Rates of SASS Surveys:

A Review of the Literature

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National Center for Education Statistics

June 1997

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IMPROVING THE MAIL RETURN RATES OF SASS SURVEYS: A REVIEW OF THE LITERATURE

I. INTRODUCTION

Mail has been the data collection mode of choice of many who conduct surveys for many reasons. Some of the reasons noted by Kanuk and Berenson (1975) and by Mangione (1995) are:

- Collecting data by mail is relatively inexpensive. There is no need to limit the sampling frame by geography because of the expense of reaching respondents in remote or distant areas
- Mail surveys are easy to implement
- There is no interviewer error since interviewers aren't used
- Mail questionnaire recipients have time to verify the validity of a survey if they choose to
- Mail respondents have privacy, the flexibility of completing the questionnaire at their leisure, and time to make sure they are providing accurate information

Although mail questionnaires are popular, response rates from mail returns alone are often quite low. Increasing mail survey response has motivated much of the research on mail surveys (Fox et al., 1988). In a 1991 article, Dillman notes that a "bibliography, including only items published since 1970, included more than 400 entries," with the vast majority of mail survey research literature focusing on ways to increase the response rate.

This paper presents the results of our review of mail survey literature and provides recommendations for the application of certain response-enhancing techniques to the Schools and Staffing Survey (SASS).

II. SUMMARY

Most of the research on improving mail survey response rates are of one of the following three types:

- Single studies that evaluate the effect of one response-inducing technique
- Comprehensive reports, based on results from previously published data, which evaluate the effectiveness of several response-inducing techniques

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- Total design systems comprising lists of elements believed to be essential in obtaining optimal response rates

We focused our attention on reports of the second type, with the intent of identifying response-inducing factors which have been shown to increase response rates across studies presented over several years. We found that incentives, multiple contacts, and respondent-friendly questionnaires are the response-enhancing techniques that have been shown to increase mail response rates across research studies and over time.

III. BACKGROUND

The Response Rate

As illustrated below, the response rate of a survey is the proportion of the survey's eligible sample units that completed questionnaires. The response rate tells what percent of the sample a researcher has actually measured

$$Response\ Rate = \frac{Interviewed\ sample\ units}{Eligible\ sample\ units}$$

$$Eligible\ cases = Interviews + Non\text{-}interviews$$

Since the responses from a sample survey's questionnaire are used to estimate population parameters, the degree to which sample estimates truly represent population parameters depends upon how similar the survey's respondents and nonrespondents are. As the response rate of a survey increases, errors in the estimates due to nonresponse decrease. The higher the response rate, the more accurate the survey (Kanuk and Berenson, 1975).

The Schools and Staffing Survey (SASS)

SASS is an integrated set of surveys sponsored by the National Center for Education Statistics (NCES) and conducted by the Bureau of the Census. SASS provides data on public and private schools, teachers, students, libraries, librarians, principals, and public school districts. These data are used by educators, researchers, and policy makers.

SASS components are:

- The Teacher Demand and Shortage Survey
- The School Administrators Survey
- The School Survey
- The Teacher Survey
- The Library Survey
- The Librarian Survey
- The Student Records Survey
- The Teacher Follow-up Survey (TFS)

Another survey, which is not a part of SASS but is sponsored by NCES and conducted by the Census Bureau is the Private School Survey (PSS). Our discussion is also applicable to this survey.

SASS uses mail questionnaires as its primary method for data collection. The survey response rates and the initial and second mail return rates from the most recent (1994) SASS are listed below in table 1. As seen in table 1, only between 25 and 75 percent of the questionnaires had been returned after the second mailing of questionnaires. It would not have been wise to produce SASS estimates based on the responses from mail returns alone.

After the second mailing of questionnaires, the more expensive, follow-up phase of data collection began, with centralized and decentralized telephone interviewing and a minute number of personal visit (face-to-face) interviews. The first column of table 1 shows unweighted final response rates for the 1994 SASS were between about 80 and 100 percent, a considerable increase from the much lower mail return rates. An increase in the mail return rates would reduce the number and expense of telephone and face-to-face interviews, reducing the overall cost of interviewing for SASS.

Table 1. Unweighted Questionnaire Response and Mail Return Rates

Survey Type	Response Rate[1]	Initial Mail Return Rate[2]	Final Mail Return Rate[2]
Teacher Listing Form: Public Schools	95.0	40.6	52.7
Teacher Listing Form: Private Schools	91.8	36.9	48.8
Teacher Demand and Shortage (LEA)	93.1	51.3	56.9
Public School Administrator	96.6	52.9	69.3
Private School Administrator	90.3	47.2	59.0
Indian School Administrator	98.7	16.3	47.5
Public School	92.0	39.7	55.6
Private School	84.1	39.4	52.3
Indian School	99.3	37.5	53.8
Public Teacher[3]	88.9	16.9	31.9
Private Teacher[4]	80.6	11.1	24.5
Indian Teacher	87.1	25.1	33.4
Student Survey[5]	91.1	32.5	68.4
Public School Library	93.5	44.2	61.4
Private School Library	77.7	33.5	56.7
Indian School Library	83.9	40.6	64.4
Public School Librarian	89.4	49.3	72.5
Private School Librarian	88.3	36.4	60.4
Indian School Librarian	90.2	44.4	68.1
Private School Survey (PSS)	99.0	45.7	66.6
Teacher Follow-Up Survey (TFS)	88.2	27.9	39.1
Stayers	88.6	33.7	44.1
Leavers	87.5	19.1	28.2

[1]Response Rate = Interviews / (Interviews + Noninterviews).

[2]These columns include all cases that are final and do not need telephone follow-up or a second mailing. That is, they include interviews, noninterviews, out-of-scope cases. (Source: 1993-94 SASS Data Collection Progress Reports.)

[3]These rates do not include the 5 percent of public schools that did not provide teacher lists.

[4]These rates do not include the 9 percent of private schools that did not provide teacher lists.

[5]These rates do not include the 12 percent of public schools, the 21 percent of private schools, and the 6 percent of Indian schools that did not participate in student sampling.

Sources: Teacher Listing Form: U.S. Department of Commerce, Bureau of the Census (1994), *1994 Teacher Listing Form Check-in Report*. Teacher Follow-up Survey: Whitener, Gruber, Colaciello et al. (1997, forthcoming), *1994-95 Teacher Followup Survey Data File User's Manual*. Private School Survey: U.S. Department of Commerce, Bureau of the Census (1996), *1996 PSS Check In Report*. All others: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Estimation* (NCES 96-089).

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The data collection schedules for the NCES surveys are in tables 2A, 2B, and 2C below.

Table 2A. 1993-94 SASS Data Collection Time Schedule

Activity	Date
Introductory letters mailed to local education agencies (LEAs)	Aug. 1993
Introductory letters and teacher listing forms mailed to schools	Sept. 1993
Census field representatives called school districts to obtain the name of the contact person to whom the Teacher Demand and Shortage Questionnaire should be addressed	Sept. 1993
Second mailing of teacher listing forms to schools	Oct. 1993
First mailing of questionnaires to LEAs and of school principal, library and librarian questionnaires to schools	Oct. 1993
Telephone follow-up of teacher listing forms not returned by school	Nov. - Dec. 1993
Second mailing of LEA, principal, library and librarian questionnaires	Nov. - Dec. 1993
First mailing of school questionnaires	Dec. 1993
First mailing of teacher questionnaires to schools	Dec. 1993 - Feb. 1994
Advance letters mailed to schools selected for the student records survey	Dec. 1993
Telephone calls to schools for the student records survey sample selection	Jan. - Feb. 1994
Second mailing of school and teacher questionnaires	Jan. - Feb. 1994
First mailing of student questionnaires to schools	Mar. 1994
Second mailing of student questionnaires to schools	Apr. 1994
Personal visit sample selection and interviews for student records survey	Mar. - June 1994
Telephone follow-up of mail nonrespondents	Jan. - June 1994

Source: Gruber et al. (1996). *1993-94 Schools and Staffing Survey: Data File User's Manual* (NCES 96-142).

Table 2B. 1995 TFS Data Collection Time Schedule

Activity	Date
Advance letters mailed to LEAs and state administrators	Aug. 1994
Teacher Status Forms (TFS-1) and letters mailed to sample schools	Sept. 1994
Reminder postcards mailed to sample schools	Sept. 1994
Telephone follow-up of Teacher Status Forms not returned by schools	Oct. - Nov. 1994
Initial mailing of leaver/stayer questionnaires (TFS-2 and TFS-3)	Jan. 1995
Second mailing of leaver/stayer questionnaires (TFS-2 and TFS-3)	Feb. 1995
Telephone follow-up of mail questionnaire nonrespondents	Mar. - May 1995

Source: Whitener et al. (1997). *Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey: 1994-95* (NCES 97-450).

Table 2C. 1996 PSS Data Collection Time Schedule

Activity	Date
First mailing of questionnaires to schools	Oct. 1995
Reminder postcards one week after first mailing of questionnaires to schools	Oct. 1995
Second mailing of questionnaires	Nov. 1995
Reminder postcards one week after second mailing of questionnaires	Nov. 1995
CATI follow-up	Feb. - May 1996
Personal visit follow-up	June - July 1996

Source: Broughman and Colaciello (1997, forthcoming). *Private School Universe Survey 1995-1996* (NCES 97-458).

IV. TECHNIQUES FOR IMPROVING MAIL SURVEY RESPONSE RATES

The response rate enhancement techniques that have been manipulated over the years can be grouped into the following four general categories:

Motivating a response

- Cash and non-cash incentives
- Multiple follow-ups (reminder post cards, additional questionnaire mailings, and telephone follow-ups, timing and number of follow-ups)
- Promise of anonymity or confidentiality
- Prenotification

Content and appearance of correspondence

- Survey sponsorship
- Personalization of correspondence
- Content of the cover letter
- Questionnaire wording, layout, color, length, and topic

Postage

- Type of outgoing and return postage (whether stamped or franked)
- Rate of postage (the use of special delivery)

The fourth group of techniques, based on attitudinal and behavioral theories of sociology and psychology, was found in more recent literature. A list of some of these ideas* follows. We will not discuss them further in this report.

Attitudinal and Behavioral

- Developing respondent burden indexes and finding ways to decrease the burden
- Using cognitive research to develop respondent-friendly questionnaires
- Conducting attitude studies to find out why people participate in surveys and use the results to increase participation
- Targeting certain subpopulations known to have lower response rates
- Pretesting cover letters and questionnaires using focus groups and other such methods
- Incorporating the idea that a limit to the response rate for a survey is determined by elements like the survey's subject matter and population of interest. This "threshold" response rate should be determined and accepted.

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* Lyberg, Lars and Patricia Dean, "Methods for Reducing Nonresponse Rates: A Review", a paper presented at the 1992 Annual Meeting of the American Association for Public Research.

There are numerous reports on studies that were conducted to improve mail survey response rates. The majority of the studies measure the effect of manipulating one factor for a specific survey. Oftentimes, the results from studies involving the same factor are inconsistent from study to study. There are also many comprehensive reports where the authors have combined results from previously published reports and analyzed the effectiveness of more than one factor across several studies.

Instead of perusing numerous reports from single-element studies to extract universal conclusions about the effectiveness of various techniques, we elected to study several of the comprehensive reports, since the authors of these studies have already performed much of this task for us. Also, because of technological changes and changes in society and its perceptions, the effect of a particular technique on increasing response rates to mail surveys could change over time. We looked at reports that were presented across the last two decades, with hopes of finding the techniques that consistently led to increased mail response rates, not only across studies, but also over time.

The reports are discussed in Section V below.

V. COMPREHENSIVE REPORTS ON IMPROVING RESPONSE TO MAIL SURVEYS

Mail Survey and Response Rates: A Literature Review

Kanuk and Berensen's 1975 review of empirical studies to increase response rates for mail questionnaire surveys provides a look at the state of mail questionnaire research up to the time. The authors evaluated several techniques, one technique at a time, and made an assessment of the success of the techniques across studies. A summary of what they found is provided below in table 3.

Table 3. Effects of Techniques on Response Rates

Technique	Conclusion
Advance Notification*	Effective in increasing the rate of return, but not better than follow-up mailings
Follow-up Techniques*	Successful across experiments; each successive contact resulted increased returns; the required cost of the additional follow-up should be weighed against the value of the additional information obtained
Questionnaire Length	Short questionnaires are not necessarily more likely to result in higher response rates than longer questionnaires
Survey Sponsorship*	Official or university sponsors have higher returns over commercial sponsors
Return Envelopes*	Shown to increase return, but only one study was found which tested the technique
Postage -- Outgoing and Return	Inconsistent results
Personalization	Inconclusive results
Cover Letter	Produced no significant differences in response rates
Anonymity	Little evidence to support the assumption that promises of anonymity or confidentiality led to improved response rates
Size, Reproduction, and Color of Questionnaires	Produced no significant differences in response rates
Premiums and Rewards*	Very effective in increasing response rates. For middle-class respondents, promised rewards produce very little increases in response, whereas immediate rewards are more effective; the opposite is true for poorer respondents.

* Led to improved response

Source: Kanuk and Berensen (1975). *Mail surveys and response rates: A literature review.*

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Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature

Heberlein and Baumgartner (1978) wanted to conduct a factorial experiment to study the results of simultaneously varying all the factors they believed had an influence on the return of mail questionnaires. They realized that such a venture would be an enormous undertaking, then settled for what they considered a "second best" approach.

They examined the effect of several factors on an average response rate using results from already published studies and techniques from regression analysis. They treated the published results from 98 experiments as if they were respondents in a survey, coded the data from the published reports, and identified 71 factors to determine their effect on response rates.

Their study led to the following:

- An average response rate of 48 percent after the first mailing (with a range of 20% to 80%)
- A final response rate of 61 percent with over one-fourth of the studies having more than 80 percent final response
- A regression equation with the 10 variables listed in table 4 were identified as predictors of the *final response rate*
- A causal model of response rates which explained 98 percent of the variance in response rates across studies. The *number of contacts and the salience of the survey to the respondent explained 51 percent of the variance in the final response*

Table 4. Results for Factors Affecting Response Rates

Factor		Results
Sponsorship	1) Market Research Background 2) Government Organization*	Unlike with marketing agencies, respondents feel that their input to government-sponsored surveys may result in changes in public policy that they could see
Population	3) General Population 4) Employee Population 5) School or Army populations	Surveys that involve the general population have lower response rates than those that involve certain subgroups of the population -- such as employees or military personnel.
Questionnaire	6) Saliency of the topic*	If a respondent is knowledgeable and/or interested in the topic, he will probably also be more confident that his personal input will be of some importance to the study.
	7) Length-Number of pages	Response rates decrease proportionally with the increase in the number of pages in the questionnaire. The author suggests reducing the number of pages in follow-up questionnaires by including only the most essential data, reasoning that the shorter questionnaire may make the recipient more willing to complete it since the burden is reduced.
Follow-up	8) Total number of contacts* 9) Special Third Contact*	If a questionnaire is not returned after the second mailing, the third attempt to contact respondents should be special attempts, like a telephone call or special delivery mailing. The special attention and effort of additional mailings or special contacts would illustrate the energy the researcher is willing to expend to get the questionnaire recipients' input, making respondents feel that their response is indeed important.
Incentives	10) Monetary Incentives with the First Contact*	

(*) Indicates a positive influence on response

Mail Survey Response Rates: A Meta-Analysis of Selected Techniques for Inducing Response

Fox and others (1988) performed a meta-analysis using results from published studies that investigated the individual influence of response rate enhancement techniques on the response rate of surveys conducted by mail. Their analysis evaluated the following techniques:

- Prenotification by letter
- Follow-up by postcard
- Outgoing postage (first-class versus bulk rate & stamped versus metered)
- Stamped return postage versus business reply
- Notification of the closing date (for return of questionnaires)
- University sponsorship versus business sponsorship
- Color of the questionnaire (green versus white)
- Handwritten note asking for cooperation
- Monetary incentives

In meta-analysis, the results from various published studies are combined and used to compute an overall or average value. The average or overall value is then tested for statistical significance. For their analysis, Fox and his colleagues used the nine individual response rate factors above to compute an aggregate estimate of effect size, where the effect was measured as the difference between the response rates of a control and a treatment group. They determined whether the aggregate estimate was statistically significant or not by accumulating evidence against the null hypothesis of "no effect" across the studies.

In their study, they did the following:

- They created a control group and assigned a "zero" level of treatment

- They performed individual tests of the hypothesis of "no effect" on the response rate from each study (z-tests) and combined individual test results using the chi-square statistic to determine an overall level of significance.

- To determine the average response rate effect size, they tested the hypothesis that "the effect of the aggregate estimate is zero" using z-tests, where the z-value used

was the ratio of a minimum variance estimate of the response rate effect to the estimate of its standard deviation.

Based on the average response rate effect sizes, the authors concluded that *university sponsorship, prenotification letters, postcard follow-ups, first-class outgoing postage, stamped return postage, and the color of the questionnaire*, all led to increases in the response rate, with university sponsorship producing the largest increase in the response rate.

Influence of 13 Design Factors on Completion Rates to the Decennial Census Questionnaires

This report (1994) combines results from four nationwide studies which were performed to assess the effectiveness of several factors on the rate at which U. S. Decennial Census questionnaires are returned. The results of this research are from tests of techniques to increase the mail return rates of a census, which is mandatory by law, rather than to a survey, which is strictly voluntary. However, we believe most of its findings can be applied to mail surveys in general.

This report evaluates the combined results from four National Census Tests to make recommendations about their application to the 2000 Decennial Census. The report also compares completion rates between treatments nationally, and between the low and high 1990 Census response rate strata. The four tests were:

- *The Simplified Questionnaire Test (SQT)*, in which respondent friendly questionnaire design, the inclusion of a difficult question, questionnaire length, and the use of replacement questionnaires were tested.
- *The Implementation test (IT)*, in which the use of prenotice letters, stamped return envelopes, and reminder postcards were tested.
- *The Mail and Telephone Mode Test (MTMT)*, in which an invitation to reply by telephone, follow-up letters with telephone invitation, different numbers of contacts, and replacement questionnaires on response to short respondent-friendly questionnaires were tested.
- *The Appeals and Long-Form test (ALFE)*, in which two kinds of respondent-friendly construction on responses to long forms, benefits appeal versus

mandatory appeal, and alternative confidentiality statements on response to short, respondent-friendly questionnaires were tested.

Together the four experiments included 27 treatment panels and tested the effect of the following 13 variables on completion rates:

- A request for social security number (SSN)
- A stamped return envelope (ST)
- A prenotice letter (PN)
- A reminder postcard (REM)
- A replacement questionnaire mailing (RQ)
- A follow-up letter after the reminder postcard (FUL)
- An invitation to respond by telephone (TI)
- Respondent-friendly versus. traditional questionnaires (RF)
- Four variations of questionnaire length (Short, Shorter, Shortest, Long)
- A strong (C^+) versus standard confidentiality statements
- A benefit appeal on the envelope and a motivational insert (BEN)
- A mandatory appeal (M)
- Inserts with either a mandatory or benefits appeal (I)

The universe for each test was the same. It consisted of 88.8 million housing units from 1990 decennial census "mail-back" areas, which are geographic regions of the country with good addresses. They excluded any unit which had been selected for a previous test and units for which the U. S. Postal Service would probably not deliver mail.

Findings from the study are reproduced in tables 6 and 7. In the contribution column, positive values signify the factor added significantly to the results and negative values signify the factor subtracted significantly from the results. Table 7 shows a consistent disparity between the low and high response strata. Summarizing the results shown in table 6,

Six factors had little or no effect on the return of questionnaires

- Stamped return envelopes
- Inviting people to call in their answers by telephone
- A benefit appeal on the envelope and cover of an insert
- A stronger confidentiality message in the follow-up letter

- A stronger confidentiality message
- A follow-up letter with a replacement questionnaire

Two factors had negative effects on the return of questionnaires

- Request for social security number
- Length of questionnaires

Five factors had positive effects on the return of questionnaires

- The prenotice letter
- Reminder postcards
- Replacement questionnaire mailing
- Respondent-friendly questionnaire design
- A printed message stating that answering the Census is mandatory by law

The authors of the study concluded that no single factor would guarantee an increase in response to the 2000 Census. They believe a viable plan would be to jointly use the five factors which consistently showed improvements across the four experiments.

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Table 5. National Completion Rates and Contributions of the Design Factors in the Presence of Selected Variables

Factor	In the Presence of	Contribution	Comparison
SSN	Shorter, RF, PN, REM, RQ	-3.4*	SQT(4) - SQT(3)
ST	Shorter, RF	2.5	IT(3) - IT(l)
	Shorter, RF, PN	3.4*	IT(5) - IT(2)
	Shorter, RF, REM	1.5	IT(6) - IT(4)
	Shorter, RT, PN, REM	1.6	IT(8) - IT(7)
PN	Shorter, RF	6.4*	IT(2) - IT(l)
	Shorter, RF, ST	7.3*	IT(5) - IT(3)
	Shorter, RF, REM	4.7*	IT(7) - IT(4)
	Shorter, RF, ST, REM	4.8*	IT(8) - IT(6)
REM	Shorter, RF	8.0*	IT(4) - IT(l)
	Shorter, RF, PN	6.3*	IT(7) - IT(2)
	Shorter, RF, ST	6.9*	IT(6) - IT(3)
	Shorter, RF, PN, ST	4.4*	IT(8) - IT(5)
RQ	Shorter, RF, PN, REM	10.5*	SQT(3) - IT(7)
	Short, RF, PN, REM, TI	7.9*	MTMT(1) - MTMT(2)
	Short, RF, PN, REM, FUL, TI	6.1*	MTMT(4) - MTMT(3)
FUL	Short, RF, PN, REM, TI	3.2*	MTMT(3) - MTMT(2)
	Short, RF, PN, REM, RQ, IT	1.5	MTMT(4) - MTMT(1)
PN & REM	Shorter, RF	12.7*	IT(7) - IT(l)
	Shorter, RF, ST	11.7*	IT(8) - IT(3)
PN & RQ	Shorter, RF, REM	15.0*	SQT(3) - IT(4)
REM & RQ	Shorter, RF, PN	16.7*	SQT(3) - IT(2)
PN, REM & RQ	Shorter, RF	22.5*	SQT(3) - IT(l)
FUL & RQ	Short, RF, PN, REM, TI	9.4*	MTMT(4) - MTMT(2)
TI	Short, RF, PN, REM, RQ	-1.4	MTMT(5) - MTMT(1)
RF	Short, IS, PN, REM, RQ	3.4*	SQT(2) - SQT(1)
	Short, IS, PN, REM, RQ, TI	1.6	MTMT(5) - SQT(l)
	Long, IS, PN, REM, RQ	4.1*	ALFE(2) - ALFE(1)
	Long, RC, PN, REM, RQ	2.6	ALFE(3) - ALFE(1)
Short	Long, RF, PN, REM, RQ	11.3*	ALFE(4) - ALFE(2)
	Long, PN, REM, RQ	11.6*	SQT(1) - ALFE(1)
Shorter	Short, RF, PN, REM, RQ	4.6*	SQT(3) - SQT(2)
	Long, RF, IS, PN, REM, RQ	15.4*	SQT(3) - ALFE(2)

Table 5. National Completion Rates and Contributions of the Design Factors in the Presence of Selected Variables. Continued

Factor	In the Presence of	Contribution	Comparison
Shortest	Short, RF, PN, REM, RQ	4.1*	SQT(5) - SQT(2)
	Shorter, RF, PN, REM, RQ	-0.4	SQT(5) - SQT(3)
	Long, RF, IS, PN, REM, RQ	15.0*	SQT(5) - ALFE(2)
	Long, RF, RC, PN, REM, RQ	16.5*	SQT(5) - ALFE(3)
Shorter & RF	Short, PN, REM, RQ	8.0*	SQT(3) - SQT(L)
	Long, PN, REM, RQ	19.6*	SQT(3) - *ALFE(1)*
Shortest & RF	Short, PN, REM, RQ	7.5*	SQT(5) - SQT(l)
	Long, PN, REM, RQ	19.1*	SQT(5) - ALFE(1)
Long, IS & RF	Short, PN, REM, RQ	-7.5*	ALFE(2) - SQT(1)
Long, RC & RF	Short, PN, REM, RQ	-9.0*	ALFE(3) - SQT(1)
C+	Short, RF, PN, REM, RQ, BEN	0.6	ALFE(5) - ALFE(6)
	Short, RF, PN, REM, RQ, MAN	-1.1	ALFE(7) - ALFE(8)
BEN	Short, RF, PN, REM, RQ, C+, I	1.8	ALFE(5) - ALFE(4)
	Short, RF, PN, REM, RQ, C, I	1.2	ALFE(6) - ALFE(4)
MAN	Short, RF, PN, REM, RQ, C+, I	9.8*	ALFE(7) - ALFE(4)
	Short, RF, PN, REM, RQ, C, I	10.9*	ALFE(8) - ALFE(4)
	Short, RF, PN, REM, RQ	9.1*	ALFE(9) - ALFE(4)
I	Short, RF, PN, REM, RQ, MAN, C+	0.7	ALFE(7) - ALFE(9)
	Short, RF, PN, REM, RQ, MAN, C	1.7	ALFE(8) - ALFE(9)

* Indicates that the difference is statistically significant at $\alpha = 0.10$

Source: U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division. 2000 Census Memorandum Series #E-85.

SQT	Simplified Questionnaire Test
IT	Implementation Test
MTMT	Mail and Telephone Mode Test
ALFE	Appeals and Long-Form Test
SSN	Social Security Number
ST	Stamped return envelope
PN	Prenotice letter
REM	Reminder postcard
RQ	Replacement questionnaire
FUL	Follow-up letter
TI	Invitation to respond by telephone
RF	Respondent-friendly versus traditional questionnaire
Short, Shorter, Shortest, Long	Questionnaire length
C+, C	Strong versus standard confidentiality statement
BEN	Benefits appeal on the envelope
M	Mandatory appeal
I	Insert with either a mandatory or benefits appeal

Table 6. Completion Rates for Treatments in Each Test

Test (Treatment)	Components	Completion Rates*		
		National	High Response Areas (HRA)	Low Response Areas (LRA)
SQT(1)	Short, PN, REM, RQ	63.4	65.8	45.2
SQT(2)	Short, RF, PN, REM, RQ	66.8	68.7	52.7
SQT(3)	Shorter, RF, PN, REM, RQ	71.4	73.5	55.1
SQT(4)	Shorter, RF, PN, REM, RQ, SSN	68.0	70.5	48.9
SQT(5)	Shortest, RF, PN, REM, RQ	70.9	73.1	54.6
IT(1)	Shorter, RF	50.0	51.9	36.3
IT(2)	Shorter, RF, PN	56.4	58.6	40.5
IT(3)	Shorter, RF, ST	52.6	54.5	37.9
IT(4)	Shorter, RF, REM	58.0	60.2	42.0
IT(5)	Shorter, RF, PN, ST	59.8	62.1	43.0
IT(6)	Shorter, RF, ST, REM	59.5	61.8	42.6
IT(7)	Shorter, RF, PN, REM	62.7	65.0	45.4
IT(8)	Shorter, RF, PN, ST, REM	64.3	66.5	47.8
MTMT(1)	Same as SOT(2)	70.6	72.7	54.9
MTMT(2)	Short, RF, PN, REM, TI	62.7	65.1	44.7
MTMT(3)	Short, RF, PN, REM, FUL, TI	66.0	68.4	48.1
MTMT(4)	Short, RF, PN, REM, FUL, RQ, TI	72.2	74.3	54.9
MTMT(5)	Short, RF, PN, REM, RQ, TI	69.3	71.5	52.5
ALFE(1)	Long, PN, REM, RQ	51.8	53.6	37.8
ALFE(2)	Long, RF, IS, PN, REM, RQ	55.9	58.4	37.0
ALFE(3)	Long, RF, RC, PN, REM, RQ	54.4	56.4	39.0
ALFE(4)	Same as SQT(2)	67.2	69.2	52.3
ALFE(5)	Short, RF, PN, REM, RQ, BEN, C+, I	69.1	71.5	50.5
ALFE(6)	Short, RF, PN, REM, RQ, BEN, C, I	68.4	70.7	51.5
ALFE(7)	Short, RF, PN, REM, RQ, MAN, C+, I	77.0	79.3	59.7
ALFE(8)	Short, RF, PN, REM, RQ, MAN, C, I	78.1	80.5	59.7
ALFE(9)	Short, RF, PN, REM, RQ, MAN	76.4	78.5	60.7

* Source: U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division. 2000 Census Memorandum Series #E-85. Formulae are reported in Sinclair and West, 1992; Sinclair et al., 1993; West, 1993; and Treat, 1993a, 1993b.

Self Administered/Mail Surveys: A Two-day Short Course

In the course material from his two-day short course on Mail Surveys (Universities of Maryland/Michigan Short Course, February 21-22,1996), Dillman discussed his Total Design Method (TDM), a comprehensive system for improving the response rates of mail surveys. With TDM, the objective is to design the elements in the survey process to fit together such that optimum response is achieved for the survey. The aim of TDM is a survey design where the prospective respondents view the rewards of responding to the survey as outweighing the costs.

The TDM includes a list of elements (below) which are believed to be essential to obtaining good response rates. The list was provided in a summary presented in the two-day course.

Table 7. Elements of the TDM Design

Booklet questionnaires - 2, 6, 10, 14 page units
Interesting cover/neutral
Question order - least to most "costly"
Connect first question to letter/interesting
Consistency of detail
Vertical flow
Instructions where needed, not in advance
One request at a time
Provide clear respondent paths
Don't use same answer format for different tasks
Type size/darkness to separate Q's from answers
Reduced type OK, usually
Avoid cross-match and other "hard" formats
Keep prose simple
Transitional statements
Pretest

Source: Dillman (1996). *Self-Administered Mail Surveys*.

In the 1996 course material, Dillman says that adhering to TDM had significant impact on response rates. The more the survey adhered to the elements of TDM the higher their response rates. He also provided a critique of his TDM. He says the major weakness of TDM is the system's "one fits all approach", which does not allow for differences between surveys. In a 1991 article on the design and administration of mail surveys, he says it may not be necessary to include all details of TDM.

As an update to his TDM, which he originally introduced in 1978, Dillman suggests the following:

- Four contacts by mail -- first class; e.g., prenotice, questionnaires, reminders, Replacement questionnaires
- A fifth mail contact by two-day priority mail
- A financial incentive that is modest and prepaid
- A contact by telephone, if possible
- Personalized correspondence
- Respondent-friendly questionnaire design that considers length, layout, and salience
- Targeting specific populations

Together, the elements comprise what he calls a "response maximization model" (Dillman, 1996).

VI. CONCLUSIONS

Mail surveys are popular because of low costs and the ease of implementation. However, mail surveys are also known to have low mail return rates. If a survey's response rate is too low, the effort and expense of designing and conducting the survey is wasted, since the accuracy and validity of the survey's results are questionable and possibly unusable. Low mail return rates have motivated researchers over the years to search for ways to increase response to mail surveys.

SASS, as do many other mail surveys, uses other data collection modes (like telephone and face-to-face interviewing) to follow-up mail nonrespondents. However, collecting data by these modes is more expensive than mail, and data collected in these modes are more prone to additional error since interviewers are used. An increase in SASS mail return rates would reduce the number of respondents that need to be reached by telephone or personal visit, thereby decreasing the overall cost of conducting a survey.

Across studies and over time, multiple contacts, interesting and easy to follow questionnaires, and incentives have been consistently effective in improving mail survey response rates.

Comments on Data Collection in SASS

- In the 1994 SASS, prenotice letters were sent only to LEAs and schools. Other potential respondents were not notified in advance of the forthcoming questionnaire.

- Multiple contacts were made:

  1) an initial questionnaire mailing
  2) a reminder postcard
  3) a second mailing of the questionnaire
  4) follow-up by telephone or personal visit

- The major portion of the burden of completing SASS questionnaires rested on the shoulders of sample schools, since teacher listing forms and school and student questionnaires were completed by school staff or principals, and the principal questionnaire was completed by principals.

VII. RECOMMENDATIONS

Follow-Ups

Multiple contact techniques are the most effective techniques for increasing mail survey response rates. SASS data collection (table 3) involves prenotification, two mailings of questionnaires, reminder postcards, and nonresponse follow-ups by telephone or face-to face interviewing.

The current SASS data collection procedure appears to already include most of the multiple contact techniques we found in the literature. The only technique associated with multiple respondent contact that has not been incorporated in SASS is the use of special postage. Reports from studies which used special delivery mail yielded inconsistent, but mostly positive results. We recommend the incorporation of Dillman's (1996) suggestions of first class mail delivery of questionnaires and a fifth mail contact by two-day priority mail be considered for SASS.

Incentives

SASS response rates for 1994 generally decreased for each additional form we asked them to fill out (table 1). This decrease may be linked to response burden. School principals and/or his staff have the task of responding to multiple SASS questionnaires, since a principal and/or his staff complete the teacher listing form, administrator, school, and student record questionnaires. We recommend providing an incentive to respondent units who complete more than one SASS questionnaire.

With the exception of additional follow-ups, the inclusion of monetary incentives with the questionnaire has been shown to be the most successful technique for improving mail survey response rates (Mangione, 1995). It's probably not wise or permissible to offer financial incentives, to have SASS questionnaire completion rate contests by school districts, or to give away pins or bumper stickers that say "I'VE RETURNED MY SASS QUESTIONNAIRE," so we recommend offering some non-monetary incentives to SASS respondents. Thank-you cards, offers to share summaries of survey results, or other incentives may be sufficient enticements to offset the burden of completing additional questionnaires.

We recommend that the incentives be provided with the questionnaires, since results from meta-analysis research on incentives in mail surveys found that incentives provided with the initial mailing of the questionnaire had a positive effect on response rates, whereas incentives which were to be sent upon the return of the questionnaire did not (Church, 1993).

Questionnaires

Respondents are more likely to complete and return questionnaires that are short, interesting, and easy to follow (Dillman et al., 1993 and 1994). We recommend scrutinizing the length of SASS questionnaires, the clarity of its instructions, and the format and sequence of its questions (Mangione, 1995) in an effort to ensure that all SASS questionnaires are respondent-friendly. In a profession already burdened with paperwork, short, interesting, and easy to follow questionnaires should be a welcome sight to "paper-weary" eyes.

Additional Suggestions for Consideration

Target SASS Sample Teachers

SASS Teacher Surveys have lower mail return rates than the other SASS components (table 1). Teachers are not notified in advance that SASS questionnaires are coming. Prenotification letters sent to SASS sample teachers may positively influence mail return results. Another suggestion is to expend extra efforts to "target" a subpopulation of teachers who, after investigation of past survey results, are identified as "late response" or "nonresponse" teachers.

Use Voice Mail, Facsimile, and Personal Computers as Alternatives to Mail

We are now in the electronic age where most public and private schools have telephones and personal computers. An additional suggestion to consider as a possible way to increase response, is to give respondents the option of returning their questionnaires by facsimile machines, completing SASS questionnaires electronically -- by computer (disks by mail) or through some type of automated voice mail system. Voice mail and computer respondents could complete their questionnaires in privacy, without the intrusion of an interviewer. Although the initial implementation of this suggestion would be expensive, the use of these modes could quickly become cost effective. Issues of confidentiality and anonymity must be addressed before any of these methods are seriously considered.

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VIII. LIMITATIONS

- Some of the results and recommendations are based on findings obtained through our comparison of comprehensive studies involving the analysis of published reports. The reports themselves may not be comparable to each other because of methodological and other differences.

- The conclusions and recommendations we've provided are qualitative, based on subjective analysis.

- Additional contacts (prenotification, thank-you cards, etc.) may not be feasible because of time limitations (length of the school year) associated with the SASS data collection process. The addition of incentives may not be cost-effective.

REFERENCES

Abramson, R., C. Cole, S. Fondelier, B. Jackson, R. Parmer and S. Kaufman (1996). *1993-94 Schools and Staffing Survey: Sample Design and Estimation*. NCES 96-089. U.S. Department of Education, Office of Educational Research and Improvement. Washington, D.C.: National Center for Education Statistics.

Broughman, Stephen and L. Colaciello (1997, forthcoming). *Private School Universe Survey 1995-1996*. (NCES 97-458). U.S. Department of Education, Office of Educational Research and Improvement. Washington, D.C.: National Center for Education Statistics.

Church, A.H. (1993). "Estimating the effect of incentives on mail survey response rates: a meta-analysis." *Public Opinion Quarterly*, 57: 62-79.

Dillman, D.A. (1996). Self-Administered/mail surveys. A 2-day short course sponsored by the Universities of Michigan/Maryland's Joint Program in Survey Methodology. February 21-22, 1996.

Dillman, D.A. (1994). *Preliminary synopsis of presentation to Marketing Research Conference of the American Marketing Association*, September 19, 1994, Hyatt Regency, San Francisco, California. This report was included in the course material provided to students attending a 2-day short course on mail survey presented through the Joint Program in Survey Methodology through the University of Maryland.

Dillman, D.A., J.R. Clark and J.B. Treat. (1994). "The Influence of 13 Design Factors on Completion Rates to the Decennial Census Questionnaire." A paper presented at the 1994 Annual Research Conference, U.S. Bureau of the Census, Washington, D.C.

Dillman, D.A., M.D. Sinclair and J.R. Clark (1993). "Effects of questionnaire length, respondent friendly design, and a difficult question on response rates for occupant-addressed census mail surveys." *Public Opinion Quarterly*, 57: 289-304.

Dillman, D.A. (1991). "The Design and administration of mail surveys." *Annual Review of Sociology*, 17: 225-249.

Fox, R.J., M.R. Crask and J. Kim (1988). "Mail survey response rates: A meta-analysis of selected techniques for inducing response." *Public Opinion Quarterly*, 52: 467-491.

Gruber, Kerry J., C.L. Rohr and S.E. Fondelier (1996). *1993-94 Schools and Staffing Survey: Data File User's Manual, Volume 1: Survey Documentation*. NCES 96-142. U.S. Department of Education, Office of Educational Research and Improvement. Washington, D.C.: National Center for Education Statistics.

Herberlein, T.A. and R. Baumgartner (1978). "Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature." *American Sociological Review*, 43: 447-462.

Kanuk, L. and C. Berensen (1975). "Mail surveys and response rates: A literature review." *Journal of Marketing Research*, 12: 440-453.

Mangione, T.W. (1995). *Mail Surveys: Improving the Quality*. Applied Social Research Methods Series, Vol. 40. Thousand Oaks, CA: Sage Publications.

Sinclair, M.D. and K. West (1992). *Simplified Questionnaire Test (SQT) Mail Response Evaluation: Final Report*. DSSD 2000 Census Memorandum Series #E-18. U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division, August 5.

Sinclair, M.D., K. West and J.B. Treat (1993). *Implementation Test (IT) Mail Response Evaluation: Final Report*. DSSD 2000 Census Memorandum Series #E-32. U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division, March 2.

Treat, James B. (1993a). *1993 National Census Test Appeals and Long-Form Experiment. Appeals or Short Form Component: Final Report*. DSSD 2000 Census Memorandum Series #E-32. U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division, October 29.

Treat, James B. (1993a). *1993 National Census Test Appeals and Long-Form Experiment. Appeals or Short Form Component: Final Report*. DSSD 2000 Census Memorandum Series #E-32. U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division, November 17.

U.S. Department of Commerce, Bureau of the Census (1994). *1993-94 SASS Data Collection Progress Reports*. Internal Bureau of the Census Documents.

U.S. Department of Commerce, Bureau of the Census (1994). *Final 1994 Teacher Listing Form Check-in Report*. Internal Bureau of the Census Document.

U.S. Department of Commerce, Bureau of the Census (1996). *1996 PSS Check-in Report*. Internal Bureau of the Census Document.

U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division. 2000 Census Memorandum Series # E-85.

West, Kirsten (1993). *1993 National Census Test Mail and Telephone Made Response Evaluations*. DSSD 2000 Census Memorandum Series #E-32. U.S. Department of Commerce, Bureau of the Census, Decennial Statistical Support Division, October 29.

Whitener, Summer D., K.J. Gruber, L. Colaciello, R. Parmer, C. Cole and C. Rohr (1997, forthcoming). *1994-95 Teacher Followup Survey Data File User's Manual*. U.S. Department of Education, Office of Educational Research and Improvement. Washington, D.C.: National Center for Education Statistics.

Whitener, Summer D., K.J. Gruber, H. Lynch, K. Tongos, M. Perona and S. Fondelier (1997). *Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey: 1994-95*. NCES 97-450. U.S. Department of Education, Office of Educational Research and Improvement. Washington, D.C.: National Center for Education Statistics.

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97-08 (Mar.)	Design, Data Collection, Interview Timing, and Data Editing in the 1995 National Household Education Survey	Kathryn Chandler

Listing of NCES Working Papers to Date--Continued

Number	Title	Contact
97-09 (Apr.)	Status of Data on Crime and Violence in Schools: Final Report	Lee Hoffman
97-10 (Apr.)	Report of Cognitive Research on the Public and Private School Teacher Questionnaires for the Schools and Staffing Survey 1993-94 School Year	Dan Kasprzyk
97-11 (Apr.)	International Comparisons of Inservice Professional Development	Dan Kasprzyk
97-12 (Apr.)	Measuring School Reform: Recommendations for Future SASS Data Collection	Mary Rollefson
97-13 (Apr.)	Improving Data Quality in NCES: Database-to-Report Process	Susan Ahmed
97-14 (Apr.)	Optimal Choice of Periodicities for the Schools and Staffing Survey: Modeling and Analysis	Steven Kaufman
97-15 (May)	Customer Service Survey: Common Core of Data Coordinators	Lee Hoffman
97-16 (May)	International Education Expenditure Comparability Study: Final Report, Volume I	Shelley Burns
97-17 (May)	International Education Expenditure Comparability Study: Final Report, Volume II, Quantitative Analysis of Expenditure Comparability	Shelley Burns
97-18 (June)	Improving the Mail Return Rates of SASS Surveys: A Review of the Literature	Steven Kaufman

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